
BioMax Environmental

Environmental Consulting and Industrial Hygiene Services

August 19th, 2008

Mr. Doug Button
Deputy Director
Real Estate Services Division
707 Third Street - 8th Floor
West Sacramento, CA 95605

**Microbial Assessment and Mitigation Procedures -
First Floor Security Kiosk Area
Department of General Services Board of Equalization Building
450 N. Street
Sacramento, California**

Dear Mr. Button,

BioMax Environmental, LLC (BioMax) is pleased to provide the Department of General Services (DGS) with this letter summary report detailing BioMax's findings and recommendations pertaining to our inspection and microbial sampling assessment services provided within the moisture and mold impacted areas associated with the 1st Floor Security Kiosk area of your 450 N Street Building (subject building) located in Sacramento, California. BioMax understands that these microbial inspection and sampling assessment services were contracted with BioMax in an effort to evaluate the recently discovered visible moisture damage and potential microbial growth identified within the noted Security Kiosk area and adjacent mechanical system plenum area located above the Security Kiosk ceiling area. According to DGS and Security Kiosk personnel, such areas had been previously identified and reported as a small area of visible staining present on the ceiling sheetrock surface within the Kiosk as observed during routine daily activities and operations by the security personnel. Following such discovery, BioMax was asked by DGS to perform a visual and surface sampling assessment of the impacted materials and areas and to participate in the development of appropriate mitigation procedures to repair and mitigate the currently damaged materials, as necessary.

Hence, these microbial inspection and assessment services have been performed with the intended purpose to gather and interpret analytical sampling data and to perform a physical inspection of the impacted material areas identified. Site access was provided April 29th, 2008 by DGS representatives. On this day, Mr. Michael A. Polkaba, CIH, REA of BioMax performed a site inspection and sampling assessment within and adjacent to the areas of concern identified by DGS representatives at locations above and adjacent to the Security Kiosk area as noted. Based on current information provided and our visual observations gathered at this time, BioMax

collected a series of surface and bulk microbial samples within and surrounding the areas of concern and representative affected materials so as to evaluate and assess the current environmental microbial conditions associated with the impacted areas at this time.

SITE OBSERVATIONS

On-site inspection and sampling assessment activities were performed by Mr. Michael A. Polkabla, CIH, REA, of BioMax in accordance with currently recognized microbial assessment and sampling guideline procedures. Mr. Polkabla has been certified in the Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene and holds the right to the designation "Certified Industrial Hygienist" (CIH) under certification number CP 7104. Mr. Polkabla is also certified by the California Environmental Protection Agency (Cal/EPA) as a Class I Registered Environmental Assessor (REA) under Cal/EPA certification number 05011. A summary of significant notations and observations gathered during BioMax's site inspection and assessment of the subject areas are compiled as follows:

1. At the time of our preliminary site inspection performed on April 29th, 2008 interior environmental conditions within the subject area consisted of a temperature of approximately 72 degrees F with relative humidity of 29 %. Ambient outdoor conditions both prior to and following our interior assessment consisted of mild sunny conditions with predominant winds noted at approximately 5-10 knots from the northwesterly direction. Outdoor temperatures ranged between 68 to 73 degrees and relative humidity range of 29 to 34 %, respectively.
2. Site observations noted within the subject Security Kiosk areas are as follows:

At the time of our assessment, a plastic barrier had been installed on the ceiling surface within and adjacent to the Security Kiosk glass area. As viewed from the working area at ground level, visible mold-like staining was clearly observed through the semi-transparent plastic sheeting covering a surface area of less than one square foot in area.

Entrance into the ceiling plenum was achieved through the ceiling access hatch present within the Security Kiosk workroom with the use of an expandable step ladder. Upon entry into the plenum area, BioMax observed plywood footing sheets in place under the existing heating, ventilation, and air-conditioning (HVAC) system equipment. Plastic sheeting barriers had been previously established by the mitigation contractor (JLS) at the direction of DGS prior to these assessment activities as an interim precautionary measure. Upon removal of selected areas (for inspection and sampling purposes), localized visual indications of "spotty" mold-like growth was observed present on the upper sheetrock paper surfaces of the existing security kiosk work room ceiling as viewed above from the plenum areas. Preliminary estimates of significant visible staining and mold-like growth were observed within an area greater than 100 square feet wherein areas of staining, delamination, and peeling of structural materials consisting primarily of sheetrock paper surfaces were noted at the time of our assessment. Based on such visual preliminary findings, BioMax collected a

series of bulk material and surface samples from representative examples of impacted materials.

3. Utilization of hand-held moisture detection equipment indicated elevated localized moisture content within many of the affected sheetrock materials surveyed within the noted areas at the time of our assessment.
4. A series of digital images were also collected during BioMax's inspection and sampling assessment activities. Images are attached to this summary report for further reference, as necessary. A detailed site map sketch indicating the extent of visibly affected areas noted at the time of this assessment is also provided for further reference.

SAMPLING PROCEDURES

On-site inspection and sampling assessment activities were conducted by Mr. Michael A. Polkaba, CIH, REA, of BioMax Environmental on April 29th, 2008. All sampling equipment, supplies, calibration materials, and collection media were provided by BioMax as part of the performance of this scope of work. Sample collection procedures and methods were performed using aseptic sampling methods following techniques prescribed by the contracted analytical laboratory.

Bulk and BioTape Surface Sampling:

During our site inspection and sampling assessment activities, representative bulk material and surface material samples were collected from interior areas and materials of concern noted within in Table 1 below. All surface samples were collected using "same-lot" BioTape collection media prepared and supplied by SKC International in accordance with manufacturers sampling guidelines as well as applicable professional certified industrial hygiene microbial sampling practices. Bulk material samples were similarly collected utilizing aseptic sample collection technique in accordance with standard microbial sampling practices. Disposable gloves utilized during sample collection and changed between each sample.

Written sampling procedural guidance material prepared by the analytical laboratory and/or sample media manufacturer may also be provided upon request. A summary of bulk material and surface material sampling locations are provided in Table 1. Specific sample locations may also be referenced within the digital image attachment and referenced site map diagram, as necessary.

Table 1. Bulk Material and BioTape Surface Sample Locations:

Sample Number	Material Sampling Location
S01	Sheetrock surface to right of entry – 1, dark staining present

Sample Number	Material Sampling Location
S02	Sheetrock surface to right of entry - 2, dark staining present
S03	Sheetrock surface to left of entry - 1, w/ light "fuzzy" deposits present
S04	Sheetrock surface to left of entry - 2, w/ light "fuzzy" deposits present
S05	Field control Blank Sample
S06	Sheetrock surface out of impacted area, w/ light "fuzzy" deposits present
B01	Bulk sheetrock paper sample under HVAC unit w/black staining present

Following sample collection, bulk material and surface samples were subsequently labeled and placed within individual plastic Ziploc storage bags for transportation via Federal Express Priority Mail to the analytical laboratory noted below. Preparation and shipping of the collected samples were accomplished in accordance with standard industrial hygiene chain of custody (COC) documentation procedures and quality assurance/quality control QA/QC practices. Once collected, labeled, and recorded, the samples were double sealed within airtight plastic Ziploc bag containers and similarly transported via Federal Express Priority Mail to Environmental Microbial Laboratories (EMLabs) of San Bruno, California. Sampling and chain of custody records are provided as an attachment to this letter report for further reference.

ANALYTICAL FINDINGS AND CONCLUSIONS

Bulk Material and Surface Sample Findings:

Laboratory analytical methods for the identification and enumeration of microbial taxa within collected surface and bulk material samples were conducted in accordance with prescribed analytical procedures and quality control/assurance measures. Laboratory analytical methods for the identification and enumeration of microbial fungal contaminants within the collected surface/bulk material samples were achieved through direct microscopic analysis using bright field microscopy.

Original laboratory results including the identification of recognizable microbial taxa are provided as an attachment to this letter report for further reference. Sampling and chain of custody records are provided as an attachment to this report for further reference. A summary of analytical findings pertaining to the collected bulk material and surface samples are presented in Table 2 below:

Table 2. Summary of Bulk Material and Surface Findings:

Sample Number	Sample Material and Location	Mold Genera Identified Present
S01	Sheetrock surface to right of entry - 1, dark staining present	Elevated Stachybotrys mold spores identified (500 counts)
S02	Sheetrock surface to right of entry - 2, dark staining present	Elevated Stachybotrys (750 counts) and Penicillium/Aspergillus type spores (600 counts) identified
S03	Sheetrock surface to left of entry - 1, w/ light "fuzzy" deposits present	Penicillium/Aspergillus (12 counts) and Cladosporium (24 counts) identified.
S04	Sheetrock surface to left of entry - 2, w/ light "fuzzy" deposits present	Penicillium/Aspergillus (55 counts) and Cladosporium (8 counts) identified.
S05	Field control Blank Sample	No mold spores identified
S06	Sheetrock surface out of impacted area, w/ light "fuzzy" deposits present	Penicillium/Aspergillus (42 counts), Cladosporium (72 counts), Smuts (11 counts), and Basidiospores (10 counts) identified.
B01	Bulk sheetrock paper sample under HVAC unit w/black staining present	Elevated Stachybotrys mold spores identified (1,000 counts)

Noted relative levels should be used for comparative purposes only and are not intended to establish "safe" or "acceptable" indoor levels/conditions.

Analytical findings as presented in Table 2 above clearly indicated the presence of unique microbial fragments (spores) present in each of the stained materials sampled as noted. The identified hydrophilic (moisture loving) mold taxa, such as Stachybotrys and Penicillium/Aspergillus type spores identified within the visibly "stained" bulk and surface materials sampled, represent what BioMax believes to be likely indicative of prior historical chronic mold growth and likely not resultant directly from any singular recent water release incident. The surface samples collected from the "fuzzy" deposits identified on the upper surfaces of the Security Kiosk ceiling sheetrock (as viewed from the plenum) indicated the presence of fugitive spore deposition both within and adjacent to the impacted area.

Although there are currently no regulatory standards or limits pertaining to allowable surface fungal concentrations (for any mold taxa) present on interior working environment surfaces, there is a general consensus among indoor air quality and microbial experts that significant visible microbial contamination found within occupied space building materials should be treated, removed, and/or otherwise minimized wherever practicable. Hence, BioMax believes that the findings detailed in this report warrant the implementation of the recommended

precautions, continued area controls, and the performance of mitigative measures pertaining to the areas of identified visible microbial contamination.

RECOMMENDATIONS

Based on our preliminary observations and review of current analytical findings within the subject Security Kiosk and adjacent plenum areas available at this time, BioMax recommends that the following corrective measures and mitigative actions be considered as follows:

1. Due to the confirmed findings of elevated microbial contamination present within the sampled building materials of the Security Kiosk area work space and adjacent plenum areas as noted in this report, BioMax recommends that additional deconstructive and appropriate mitigation the affected structures and ceiling cavities within the subject areas be performed as noted below. The purpose of these activities should be to evaluate the full extent of moisture damages and to appropriately perform microbial mitigative measures as detailed in this summary report. Certainly, all mitigative activities must be performed under the strictest of protective containment systems during the duration of such measures.
2. In performing the recommended mitigative measures, BioMax recommends that a qualified and experienced microbial abatement contractor be selected to erect critical containment barriers encompassing the Security Kiosk workroom space and adjacent areas within the greater elevator lobby. BioMax understands that DGS has prepared a detailed containment layout map of the working level spaces and is available for further detailed review as necessary. The selected contractor must be specifically trained in the field of microbial abatement techniques and methods as well as maintain demonstrated proficiency in the establishment and use of appropriate barriers, personal protective equipment, abatement techniques and methods in the removal and decontamination of microbial affected and impacted materials. Similar negative pressure critical barriers shall also be established at any perimeter openings within of the plenum space so as to preclude fugitive emissions from escaping the plenum areas during the performance of these mitigative activities.
3. **Kiosk Containment** - Due to the current high use occupancy and staff use of these first floor elevator lobby areas, as a precautionary measure, BioMax recommends that barrier structures within the first floor Security Kiosk areas be constructed as "hard shell" containment barriers utilizing plywood and/or other similar hard building materials. Within such barriers, the mitigation contractor should be directed to install a fully enclosed negative pressure environmental containment barrier encompassing the entirety of the impacted ceiling materials as previously designed and approved through the pre-planning stages of this scope of work. These containment systems shall be designed for the purposes of containing and controlling possible fugitive emissions of airborne fungal spore contaminants during all forthcoming deconstruction, inspection, and mitigative activities within the Security Kiosk area and the associated adjacent plenum spaces as noted. All critical containment systems shall be constructed of plastic and/or otherwise airtight materials so as to create a negative pressure system within the noted areas of concern. Due to physical constraints, all negative

air pressure shall be maintained within the critical areas with the use of a High Efficiency Particulate Aerosol (HEPA) filtered "negative air machine" vented to the outside workspace environment. An adequate supply of filtered intake air shall also be established to allow an adequate supply of "clean" filtered make-up air into the critical containment. Wherever possible, clear translucent plastic observation windows shall be placed on the critical containment barrier within direct sight of the affected areas for the purposes of non-entry inspection during the performance of prescribed mitigative measures. BioMax is prepared to provide your selected contractor with additional and ongoing detail pertaining to the establishment maintenance, and specific locations of critical containment barriers, as necessary. Once, containment parameters have been established, the mitigation contractor shall maintain an "as built" record of exact containment locations and materials for further review and reference.

4. **Plenum containment** – Due to the identification of elevated microbial spore deposition on the sampled surfaces assessed of the areas within and adjacent to the impacted materials in the plenum area, BioMax recommends that the majority of the plenum system be established as the containment system. As such, all perimeter penetrations leading to adjacent plenum spaces may be sealed with plastic and maintained within negative pressure so as to preclude fugitive transmission of spores during the clean-up process. Hence, following the physical removal and/or decontamination of moisture and mold damaged building materials, a detailed HEPA vacuuming of adjacent horizontal surfaces (such as exposed sheetrock at plenum flooring) shall be performed prior to forthcoming clearance assessment as noted below.
5. **HEPA Scrubbers** - Upon establishment of critical containment barriers, BioMax recommends that the selected microbial abatement contractor also places and maintains appropriate HEPA filtered air-scrubbing and/or dehumidification units within the affected work space and plenum areas, as necessary. As an additional precautionary measure, temporary portable HEPA filtered air scrubber units will also be operated in the hallway outside the containment area for the duration of mitigative activities. It is currently anticipated that all mitigative activities shall be performed during "off hours" as requested by BOE management personnel.
6. **Containment Entry Areas** - A series of similar plastic and/or otherwise impermeable zippered entry chambers shall also be erected at the entrance of the containment systems for the purpose of establishing worker entrance/exit and clean personal protective equipment donning and decontamination area. HEPA filtered vacuum equipment capable of the effective removal of particulate contaminants from tools and personal protective equipment shall be placed within each of the zippered chambers closest to the working area. During such measures, appropriate signage and warnings must be posted on the exterior of containment entrances to preclude uninformed access from unauthorized personnel.
7. **Pressure Monitoring** - Data logging monitoring equipment employed to record pressure differentials on a 24-hour basis shall be used for the duration of functional barrier use. A negative pressure goal of 0.02 shall be utilized for the duration of the mitigative effort and

paper roll-chart records shall be collected and maintained by the mitigation contractor for review and reference as requested.

8. **Supply Vents and Penetrations** - All adjacent Heating Ventilation and Air Conditioning (HVAC) supply vents and ceiling and/or wall mounted recessed lighting/ fan penetrations within each of the containment systems shall be deactivated and covered within similar plastic barrier systems to preclude fugitive transfer of airborne particulates. Any smoke detectors and/or fire suppression systems, however, shall NOT be covered nor rendered inoperable within the subject building unless authorized to do so under the direction and supervision of DGS building maintenance personnel.
9. **Worker Training** - Workers engaged in mold remediation/mitigation activities must be adequately trained and equipped with properly selected personal protective equipment (PPE) including, at minimum, hooded Tyvek coveralls, air purifying full face respirators with N100 minimum HEPA filter rating or similar PAPR systems, nitrile or latex gloves, chemical resistant boots or boot covers, with taped joints. Site control zones shall be established with exclusion, contaminant reduction (decontamination), and support zones in accordance with published Environmental Protection Agency (EPA) and California Department of Occupational Safety and Health (Cal/OSHA) guidelines. BioMax would be happy in providing the selected contractor with further site-specific detail regarding PPE regimen and appropriate site control zones, as necessary.
10. **Removal of Damaged Materials** - BioMax specifically recommends that all physically stained and/or mold damaged materials (such as impacted sheetrock and plywood materials) be inspected and removed under containment controls. As verified through visual inspection, any stained and/or moisture/mold affected interior sheetrock and building materials should be removed, wherever feasible, to the extent of visible staining, at a minimum. All visibly damaged plywood walk-way floor materials associated with the plenum area HVAC equipment shall also be removed and disposed under containment controls for appropriate inspection of underlayment materials. Removal of moisture impacted and mold damaged materials may employ the use of supplemental item-specific containment methods and systems (such as sealed plastic glove-bag containment systems, or equivalent) applicable to the materials being removed at the option of the mitigation contractor and direction of the Project CIH. BioMax currently anticipates that all visually affected ceiling sheetrock and plywood HVAC unit flooring materials present within the plenum space shall be removed for disposal, and physical inspection of underlayment surfaces, as necessary. All sheetrock exhibiting elevated moisture content and/or staining within adjacent areas shall be similarly removed as necessary. Any underlayment materials exhibiting visible signs of moisture staining shall also be removed or decontaminated, as necessary.
11. **Other Damaged Areas Encountered**- Other potentially affected areas and building materials encountered during these deconstructive and investigative stages must be thoroughly inspected during these deconstructive stages to identify the extent of any additional microbial related materials and water damage indicators. In general, all microbial

impacted materials shall be removed to the extent of visible staining and at least 2 feet beyond such identified perimeters, wherever possible.

12. **Decontamination and Cleaning** - All remaining moisture/mold affected porous and non-porous building materials deemed infeasible for removal and/or disposal (due to structural integrity concerns) shall be inspected and receive a series of decontamination treatment measures designed to minimize and control the presence of microbial related substances. Decontamination methods employed shall, at a minimum, include treatment of all identified surfaces with a series of thorough chlorine based mildicide (minimum 10 parts water to 1 part chlorine soln.) applications followed by a series of thorough HEPA filtered vacuuming procedures using power sanding and/or brush agitation. The duration and frequency of mildicide and HEPA sanding/brushing applications employed may vary depending on local material contamination but shall be sufficient in removing and decontaminating all visible surface staining to levels deemed by BioMax to be consistent with representative background levels. Reasonable additional mitigative measures and controls may be required, as necessary, upon discovery of additional contaminated materials as well as BioMax's site inspection findings and observations performed during this scope of work. BioMax will be available to provide ongoing consultation with the contractor pertaining to these measures and site/material specific decontamination measures upon request.
13. **HEPA Vacuuming of Adjacent Plenum Surfaces** - Due to the confirmed presence of elevated spore deposition within horizontal surfaces (plenum sheetrock floor) adjacent to the visibly impacted areas, BioMax recommends that such plenum area surfaces be HEPA vacuumed as part of this mitigative effort. The intent of such efforts and activities is to significantly reduce the confirmed accumulation of spores and debris within such surfaces as observed and sampled in this assessment. Although existing outside of the visibly stained areas, such deposits were noted in this report as "fuzzy" debris existing on the exposed sheetrock floor (paper-side) surfaces as viewed from the plenum space. Hence, subsequent cleaning by the mitigation contractor of these surfaces is recommended as a precautionary protective measure as part of this mitigative effort.
14. **Clearance Inspection and Assessment** - Upon completion of mitigation efforts performed by the selected mitigation contractor, BioMax recommends the performance of a visual inspection conducted by the Project CIH to verify that all significant mold and moisture related staining have been removed and/or treated and that all prescribed mitigative efforts and measures have been appropriately achieved. Once visual clearance criteria has been established, the Project CIH will collect a series of microbial "clearance" air samples to further verify that all affected containment areas have been appropriately decontaminated to acceptable background airborne levels and that the affected material areas within the subject building are deemed as "acceptable" for reconstruction. Such Post Mitigative "clearance" evaluation criteria applicable to this building have been previously developed in BioMax's February 15th, 2008 letter report titled Post Mitigation Clearance Assessment Protocols and previously approved by HygieneTech, Inc. (HTI) in their approval letter dated February 22nd, 2008. Additional "punch-list" action items may be provided to the mitigation contractor

following the performance of this site clearance inspection following receipt of analytical results, as deemed necessary.

15. **Mildicide Encapsulant** - Upon review of analytical sampling results by the Project CIH and achievement of acceptable post mitigative clearance criteria, BioMax recommends that DGS considers directing the mitigation/reconstruction contractor apply a mildicide-based sealant onto all remaining organic-based building materials and previously treated surfaces as an additional precautionary measure. Use of a recognized commercially available sealant product with microbial growth inhibitors in accordance with manufacturer's application and use instructions is believed to be currently acceptable for these purposes. The provision of appropriate access must certainly be provided to BOE and its consultants for inspection of affected areas and materials prior to final encapsulation and reconstruction upon request.
16. **Repair Verification and Inspection** - Following the performance of these mitigative measures, the designated site reconstruction contractor is strongly encouraged to verify that repairs to any faulty and/or deficient building penetration, drainage, plumbing and/or building envelop sealing systems have been appropriately inspected, replaced/repared, and function tested prior to the reconstruction of the interior structures and cavities. Such repairs and inspection should be performed by a person knowledgeable in building construction codes and requirements as applicable to the materials and areas in question. Certainly, the repair/replacement and/or establishment of any such additional engineering controls (as recommended through additional professional consultation) must be performed and implemented in accordance with applicable standards, building codes, and ordinances, as necessary.
17. **Reconstruction** - Upon completion, reconstruction of interior structural materials should be undertaken utilizing visibly clean (hand selected) construction grade materials in accordance with applicable building codes and requirements. The reconstruction contractor shall be required to only select materials which are obtained from reputable commercial sources and which are believed and visually verified to be free from elevated microbial contamination and/or elevated moisture content. New building materials, which are notably moist and/or visibly stained, shall NOT be used during the reconstruction of the subject structure. BioMax specifically recommends that reconstruction materials selected for use be specifically selected based on their moisture deterrent and anti-microbial properties wherever feasible.
18. **Additional Assessment and/or Mitigation** - Reasonable additional assessment and mitigative measures may also be required upon the identification of new or previously undiscovered materials and/or information related to moisture/microbial impacts, as necessary. Any reoccurrence of moisture intrusion following reconstruction should certainly be reviewed and addressed through further professional consultation, as necessary. BioMax would be happy to provide additional microbial consultative services pertaining to the mitigation of such structures so as to minimize potential adverse impacts to the interior working environment during the performance of any such activities upon request..

Once again, it has been a pleasure working with DGS on these important matters. If you have any additional questions, comments, or require further assistance, please do not hesitate to contact me directly at (510) 724-3100.

Sincerely,



Michael A. Polkabila, CIH, REA
Vice President, Principal



LIMITATIONS

Please note that the professional opinions presented in this review are intended for the sole use of DGS and their designated beneficiaries. No other party should rely on the information contained herein without the prior written consent of BioMax Environmental and DGS. The professional opinions provided herein are based on BioMax's review and understanding of current site information and observed site conditions present within the areas inspected at the time these services were performed. Professional recommendations provided as part of this limited scope of work are intended for client consideration only and are not intended as a professional or regulatory mandate. Implementation of any of the above measures or recommendations does not, in any way, warrant the day-to-day health and/or safety of building occupants, residents, site workers, nor regulatory or building code compliance status during normal and changing environmental conditions. As microbial contamination, by nature, may change over time due to additional moisture intrusion, favorable growth conditions, and changing environments, the findings of this report are subject to change in the event that such conditions and/or environments arise. Also, the professional opinions expressed here are subject to revision in the event that new or previously undiscovered information is obtained or uncovered.

The information contained in this and any other applicable report communication is intended for consideration purposes only. It is not intended, nor should it be construed as providing legal advice or warranting any level of safety or regulatory compliance. The sole purpose of such information is to assist with the identification, evaluation and control of potential contamination or unnecessary physical, chemical, and/or biological hazards. Any action taken based on this information, including but not limited to opinions, suggestions and recommendations, whether implied or expressed, is the sole responsibility of the individual taking the action. Risk management and safety is criteria dependent and situation specific requiring extensive knowledge and value assessments to be properly determined by competent professionals.

These services were performed by BioMax in accordance with generally accepted professional industrial hygiene principals, practices, and standards of care. Under the existing Industrial Hygiene Definition and Registration Act, all reports, opinions or official documents prepared by a Certified Industrial Hygienist (CIH) constitutes an expression of professional opinion regarding those facts or findings which are subject of a certification and does not constitute a warranty or guarantee, either expressed or implied.

**EMLab P&K**

Report for:

Mr. Michael Polkabia
Biomax Environmental
775 San Pablo Ave.
Pinole, CA 94564

Regarding: Project: DGS/BOE Building; 450 N Street, Sacramento, CA
EML ID: 417194

Approved by:

Lab Manager
Dr. Kamashwaran Ramanathan

Dates of Analysis:

Quantitative spore count direct exam: 05-02-2008

Project SOPs: Quantitative spore count direct exam (100008)

This coversheet is included with your report in order to comply with AIHA and ISO accreditation requirements.

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank corrections of results is not a standard practice. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

EMLab P&K

1150 Bayhill Drive, Suite 100, San Bruno, CA 94066
(650) 829-5800 Fax (650) 829-5852 www.emlab.com

Client: Biomax Environmental

C/O: Mr. Michael Polkabila

Re: DGS/BOE Building: 450 N Street, Sacramento, CA

Date of Sampling: 04-29-2008

Date of Receipt: 05-01-2008

Date of Report: 05-02-2008

QUANTITATIVE SPORE COUNT REPORT

Location:	B01: 3x3" R-sheetrock paper, black staining		S01: 1x1" R-first floor plenum sheetrock surface near B01 sheetrock Swt		S02: 1x1" R-first floor plenum sheetrock surface near B01		S03: 1x1" L-first floor plenum light fuzzy deposits sheetrock	
Comments (see below)	None		None		None		None	
Sample type	Bulk sample		Tape sample		Tape sample		Tape sample	
Lab ID-Version#:	1832515-1		1832516-1		1832517-1		1832518-1	
	raw ct.	spores/unit	raw ct.	spores/unit	raw ct.	spores/unit	raw ct.	spores/unit
<i>Alternaria</i>							1	0.053
<i>Arthrinium</i>								
<i>Ascospores*</i>							1	0.053
<i>Aureobasidium</i>								
<i>Basidiospores*</i>							2	0.11
<i>Bipolaris/Drechslera</i> group							2	0.11
<i>Botrytis</i>							2	0.11
<i>Chaetomium</i>								
<i>Cladosporium</i>							24	1.3
<i>Curvularia</i>								
<i>Epicoccum</i>								
<i>Fusarium</i>								
<i>Myrothecium</i>								
<i>Nigrospora</i>								
Other brown							2	0.11
<i>Penicillium/Aspergillus</i> types†					600	3.000	12	0.63
<i>Pithomyces</i>								
<i>Rusts*</i>								
<i>Smuts*, Periconia, Myxomycetes*</i>							8	0.42
<i>Stachybotrys</i>	1,000	5.000	500	2.500	725	3.600		
<i>Stemphylium</i>								
<i>Torula</i>								
<i>Ulocladium</i>								
<i>Zygomycetes</i>								
Background debris (1-4+)††	N/A		2+		1+		4+	
Sample size	100		100		100		100	
Unit	1 mm ²		1 mm ²		1 mm ²		1 mm ²	
TOTAL SPORES/UNIT		5.000		2.500		6.600		2.786

Comments:

* Most of these spore types are not seen with culturable methods (Andersen sampling), although some may appear as nonsporulating colonies. Most of the basidiospores are 'mushroom' spores while the rusts and smuts are plant pathogens.

† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paeclomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.

†† Background debris is an indication of the amount of non-biological particulate matter present on the slide (dust in the air) and is graded from 1+ to 4+ with 4+ indicating the largest amounts. This background material is also an indication of visibility for the analyst and resultant difficulty reading the slide. For example, high background debris may obscure the small spores such as the *Penicillium/Aspergillus* group. Counts from areas with 4+ background debris should be regarded as minimal counts and may actually be higher than reported.

‡ A "Version" greater than 1 indicates amended data.

EMLab P&K

1150 Bayhill Drive, Suite 100, San Bruno, CA 94066
(650) 829-5800 Fax (650) 829-5852 www.emlab.com

Client: Biomax Environmental

C/O: Mr. Michael Polkabila

Re: DGS/BOE Building; 450 N Street, Sacramento, CA

Date of Sampling: 04-29-2008

Date of Receipt: 05-01-2008

Date of Report: 05-02-2008

QUANTITATIVE SPORE COUNT REPORT

Location:	S04: 1x1" L-first floor plenum light fuzzy deposits on sheetrock		S05: 1x1" first floor F.B.(QA/ QC)		S06: 1x1" N. side, out of imported area	
Comments (see below)	None		None		None	
Sample type	Tape sample		Tape sample		Tape sample	
Lab ID-Version†:	1832519-1		1832520-1		1832521-1	
	raw ct.	spores/unit	raw ct.	spores/unit	raw ct.	spores/unit
Alternaria					4	0.21
Arthrinium						
Ascospores*					3	0.16
Aureobasidium						
Basidiospores*	2	0.11			10	0.53
Bipolaris/Drechslera group					1	0.053
Botrytis						
Chaetomium						
Cladosporium	8	0.42			72	3.8
Curvularia						
Epicoccum	1	0.053			1	0.053
Fusarium						
Myrothecium						
Nigrospora						
Other brown					1	0.053
Other colorless						
Penicillium/Aspergillus types†	55	2.9			42	2.2
Pithomyces						
Rusts*						
Smuts*, Periconia, Myxomycetes*	1	0.053			11	0.58
Stachybotrys						
Stemphylium					1	0.053
Torula						
Ulocladium	1	0.053				
Zygomyces						
Background debris (1-4+)††	4+		None		4+	
Sample size	100		100		100	
Unit	1 mm ²		1 mm ²		1 mm ²	
TOTAL SPORES/UNIT		3.589		< 0.01		7.692

Comments:

* Most of these spore types are not seen with culturable methods (Andersen sampling), although some may appear as nonsporulating colonies. Most of the basidiospores are 'mushroom' spores while the rusts and smuts are plant pathogens.

† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.

†† Background debris is an indication of the amount of non-biological particulate matter present on the slide (dust in the air) and is graded from 1+ to 4+ with 4+ indicating the largest amounts. This background material is also an indication of visibility for the analyst and resultant difficulty reading the slide. For example, high background debris may obscure the small spores such as the *Penicillium/Aspergillus* group. Counts from areas with 4+ background debris should be regarded as minimal counts and may actually be higher than reported.

‡ A "Version" greater than 1 indicates amended data.

BULK / SURFACE SAMPLING RECORD

BIOMAX ENVIRONMENTAL, LLC

775 San Pablo Avenue

Pinole, CA 94564

Phone (510) 724-3100 Fax (510) 724-31435 biomaxenv@aol.com

Project Name and Location: 450 N. Street, Sacramento, CA - First Floor Security Area

Client: DGS / BOE Building

Analysis Requested: Fungal ID / Relative enumeration / spores per mm² if possible

Analytical Laboratory: EM Labs

Date of Sampling: 4/29/08

Required Turn Around Time: 24 Hour

Sampled By: M.A. Pollak MHA MHA

Sample ID Number	Sample Type (Bulk/Surface)	Area/Volume Sampled	Location/Description
S01	BioTape	1x1" R	First Floor Plenum Sheetrock Surface NEAR BO1 Sheetrock Surface
S02	BioTape	1x1" R	First Floor Plenum Sheetrock surface NEAR BO1
S03	BioTape	1x1" L	First Floor Plenum Light fuzzy deposits sheetrock
S04	BioTape	1x1" L	First Floor Plenum Light fuzzy deposits on sheetrock
S05	BioTape	1x1"	First Floor FR. (QA/QC)
S06	BioTape	1x1	N. Side (out of impacted Area)
BO1	Bulk	3x3" R	Sheetrock Poor Black staining

Instructions and Comments: Fungal ID / Relative enumeration / spores per mm² if possiblePlease sign this form below acknowledging sample receipt and return executed form with laboratory reports. Fax, send and e-mail results to BioMax Environmental at (510) 724-3145 biomaxenv@aol.com

Relinquished by: <u>M.A. Pollak</u>	Received By: <u>Ann Morrissey</u>
Method of Transportation: <u>FedEx</u>	
Time/Date Sent: <u>4:00 4/29/08</u>	Time/Date Received: <u>5-1-08 9am</u>

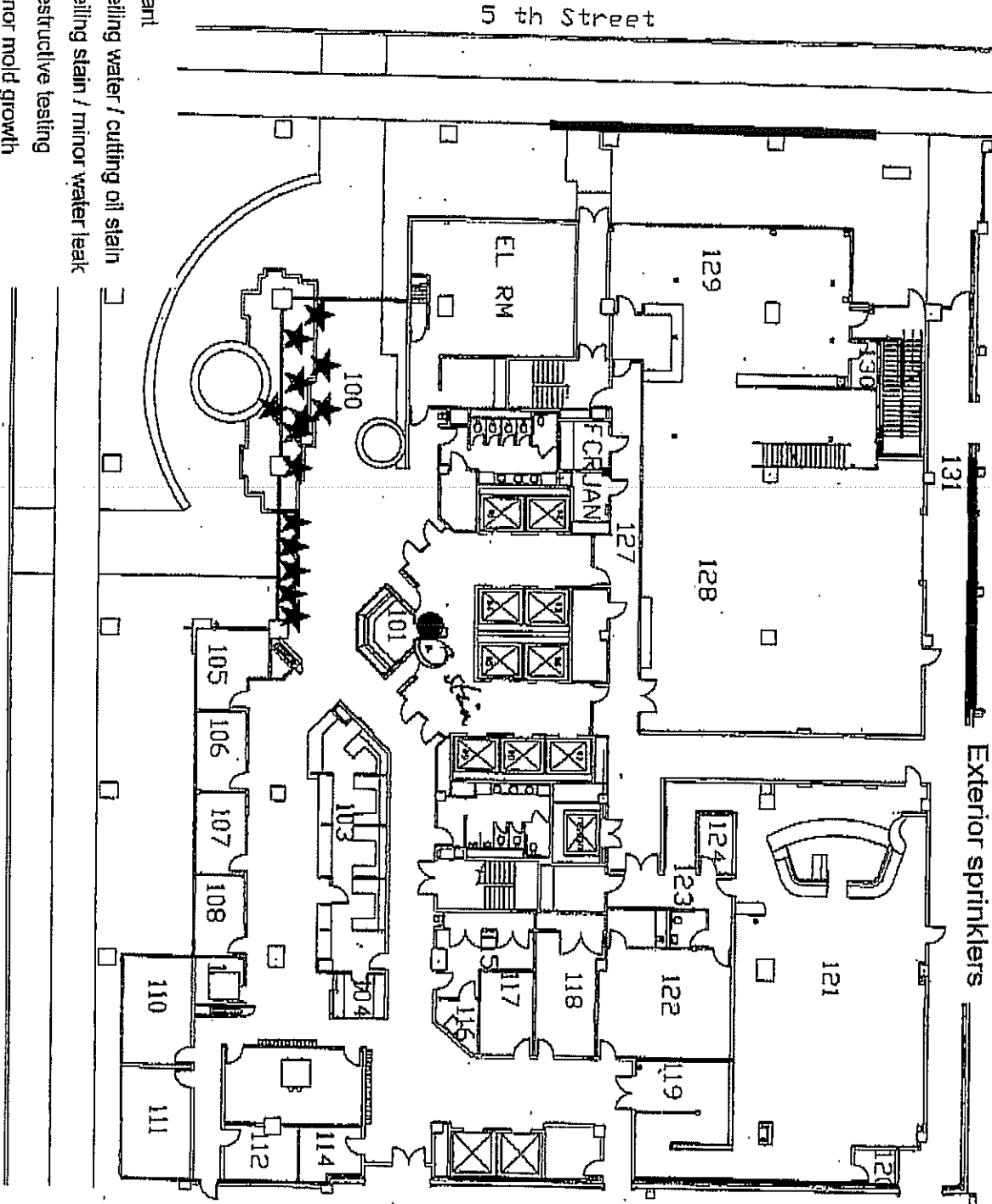
Page 1 of 1

FIRST FLOOR - NE

- ★ Plant
- Ceiling water / cutting oil stain
- Ceiling stain / minor water leak
- ▨ Destructive testing
- ▩ Minor mold growth
- Significant mold growth

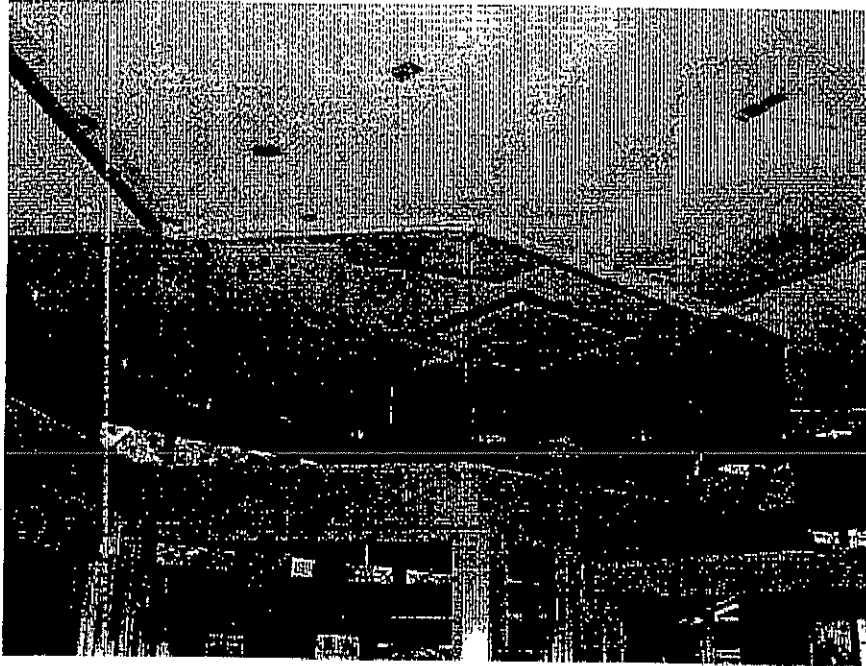
5 th Street

N Street



Attachment A: Digital ImagesApril 29th, 2008BOE Building 1st Floor Security Kiosk Area
Sacramento, CA

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[Click here for color photos](#)

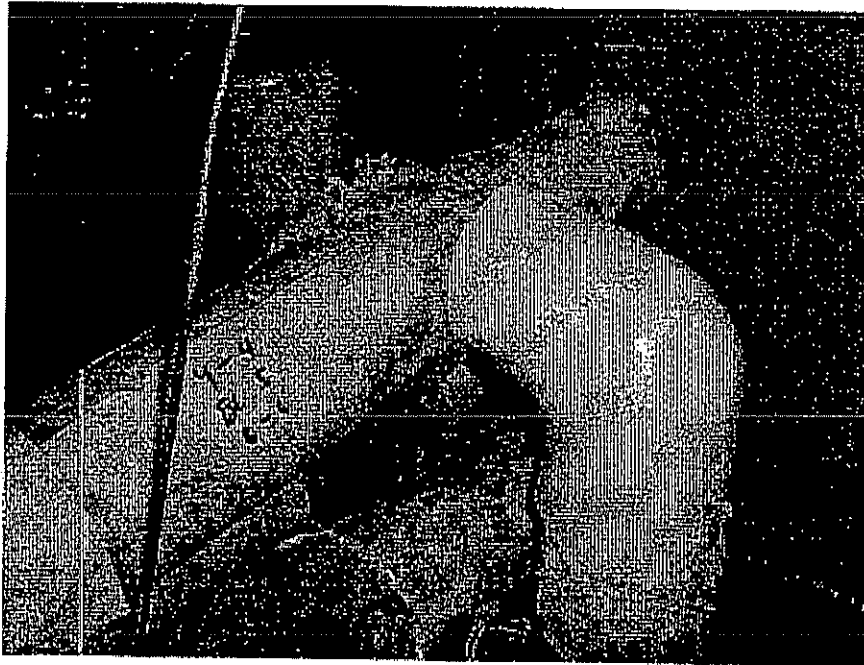
- 1) Image of security area kiosk station ceiling with interim containments in place at time of assessment of BOE Building (Subject Building) located at 450 N Street, Sacramento.



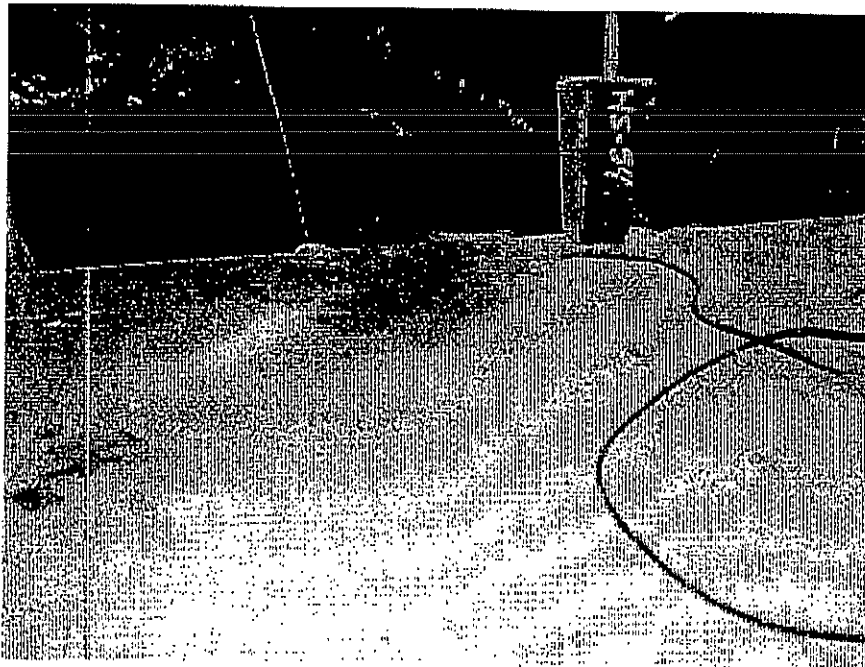
- 2) Image of inspector entering ceiling plenum space through access panel. Note presence of plastic containment barriers over impacted materials at time of inspection.

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Sacramento, CA

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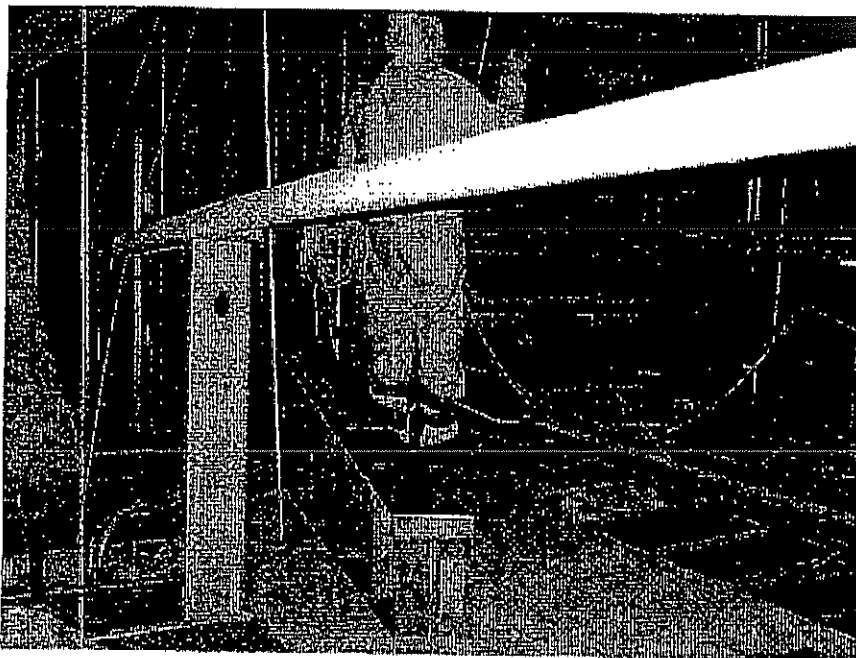
- 3) Image of HVAC plumbing with indications of moisture staining present on insulation materials located above the impacted areas.



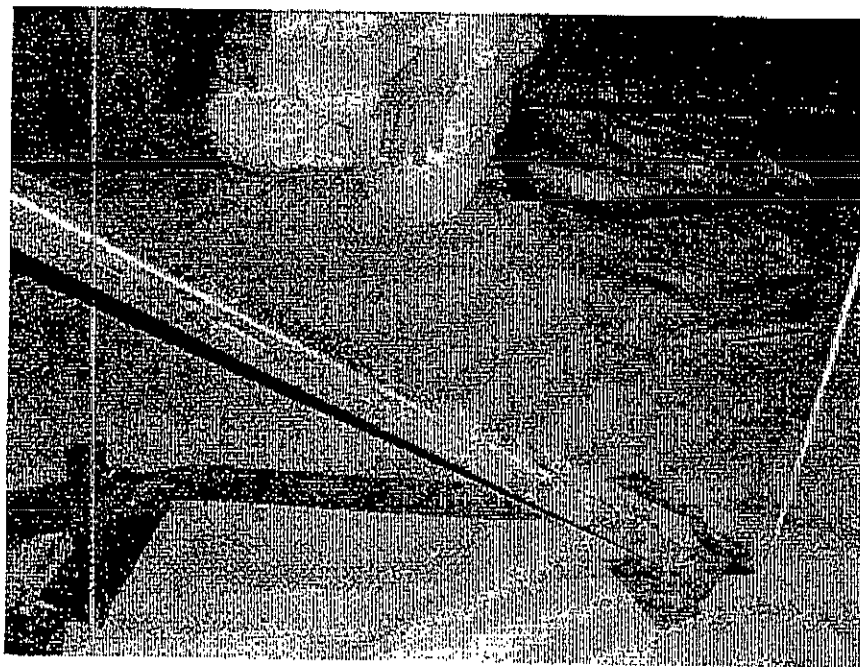
- 4) Image of stained sheetrock material associated with chronic moisture release from HVAC systems.

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- 5) Image of inspector walking on plywood "cat walk" boards previously installed on ceiling joist structures within ceiling cavity.



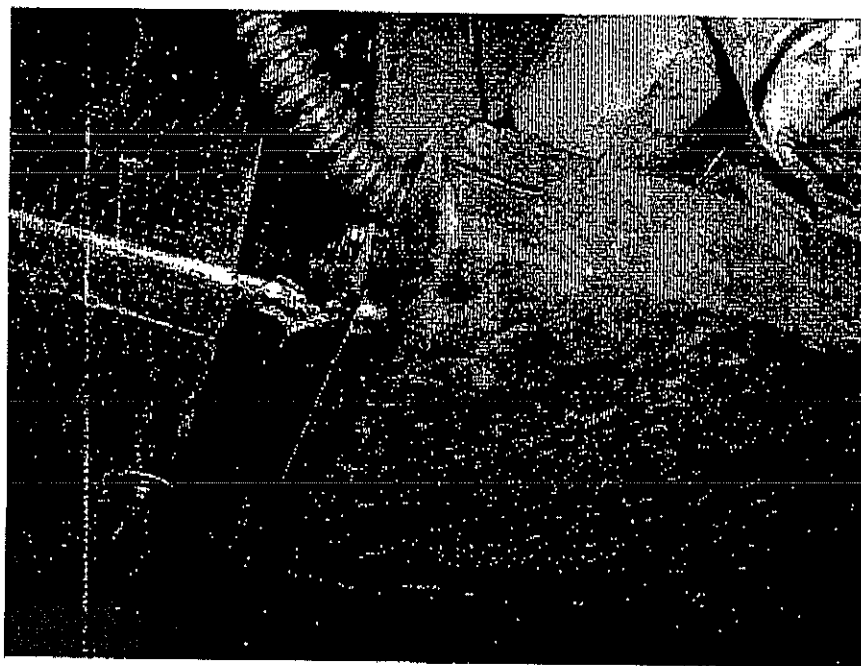
- 6) Additional image of plastic barriers which were opened to gain access for inspection and sampling of affected materials.

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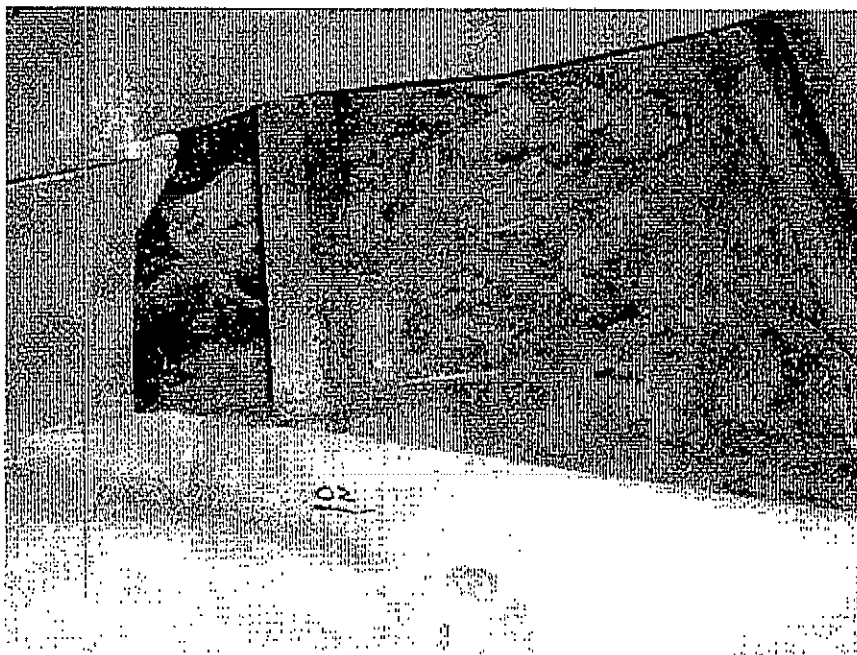
- 7) Close-up image of stained materials within ceiling materials of bay directly beneath HVAC system. Samples B01 and S01 collected from such materials.



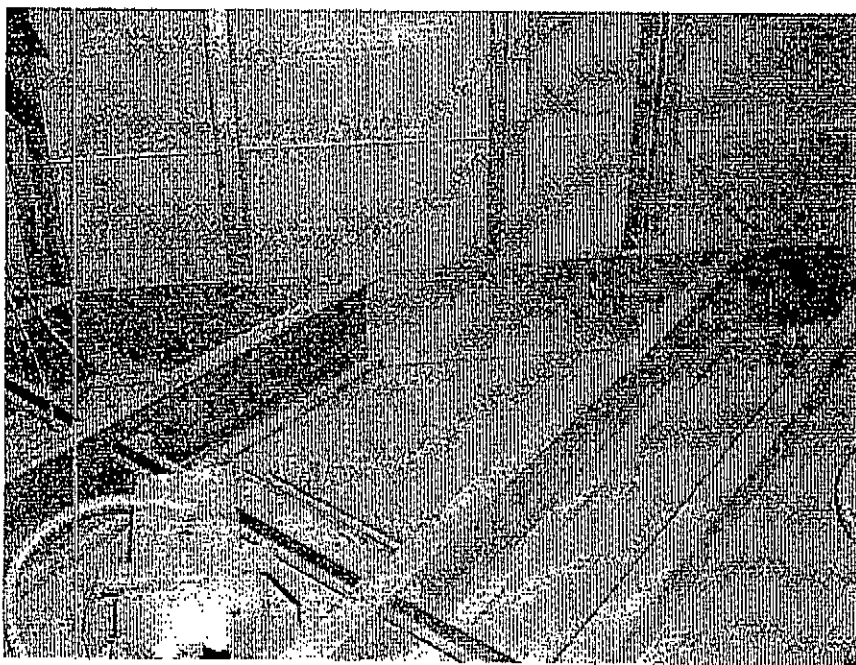
- 8) Image of physical dripping from corner of condensate pan located under HVAC system apparatus.

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9) Image of adjacent bay cavity where Sample S02 was collected within impacted area.



10) Image within ceiling plenum area away from impacted materials where surface control sample S06 was collected from horizontal surface in north corner of space.